



PRODUCT DATA

 United Technologies



39CQM

AIR HANDLING UNIT

Air Flow : 2,000~100,000 m³/h



The New, Versatile and Flexibility in Commercial Air Conditioning System

- Units are rated in accordance to AHRI Standard 430 whereas the coil performance shall be rated in accordance to AHRI Standard 410.
- Double-skin casing with 50mm (2") 40kg/m³ CFC-Free PU insulation which isolates insulation exposure to the air stream.
- Wide range of coils offering:
 - Chilled Water - 1, 2, 3, 4, 5, 6, 7, 8 rows with 8, 10, 12, 14 fin per inch.
 - Hot Water - 1, 2, 3, 4, 5, 6, 7, 8 rows with 8, 10, 12, 14 fin per inch.
 - DX Coil - 4 and 6 rows with 8, 10, 12, 14 fin per inch.
- All coils are factory pressure tested at 400 psig under water as standard with compressed dry air.
- Coil tracks enable easy coil removal for complete cleaning and assurance of a dry unit interior.
- Powder painted sloped galvanized steel drain pan with side drainage as standard (optional stainless steel drain pan).
- Optimized fan impeller size to meet performance criteria:
 - Forward curved blade - sizes 160mm to 1000mm.
 - Backward curved / Air foil blade - sizes 225mm to 1000mm.
 - Plug fan - sizes 315mm to 1400mm.
- Low leak construction with hexagonal socket compression, latch type and nitrile gasket on mating panel parameter.
- Factory installed unit base of 100mm height, constructed of 14 gauge galvanized steel (optional 125mm height for marine application).
- Optional factory supplied Heat Recovery Wheel (HRW) or Horizontal Heatpipe for energy management application.
- Optional factory installed UVC lamp.
- AHU selection software for easy unit selection (please refer to the Carrier's representative for more details).



Direct Expansion Coil (DX Coil)



Coils are aluminum/copper with belled collars and bonded 12.7mm OD copper tubes by mechanical expansion. The coils have galvanized steel casing and provided with brass distributors with sweat type connections.



Chilled Water Coil



Coils are of aluminum/copper plate fins with belled collars and bonded to 12.7mm OD copper tubes by mechanical expansion. The coils have galvanized steel frame and steel headers with male threaded connections.

Option: Copper header with brazing type connection.



Assembly Fan Housing Motor and Base (FMB).



FMB are made of painted heavy gauge mild steel (for fan size 450 and above) or power strut type (for fan size 160 to 400) to ensure proper and easy installation fan housing and motor.



Spring Isolator.



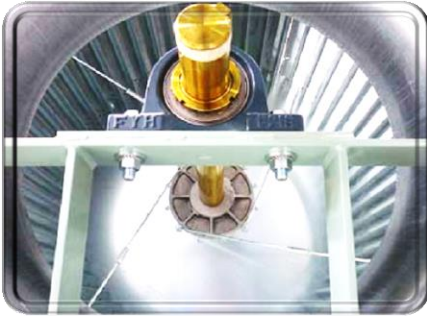
As standard from the factory, the fan and motor assembly are mounted on a common base with color-coded internally mounted helical spring isolators, which saves site installation cost.



Drain Pan and Drain Outlet.



New drain pan assembly for better drainage, side access drain and sloping for rapid water flow and better Internal Air Quality (IAQ). Ready to couple with male connection.



Bearing Arm



Self aligning double row ball bearings mounted within a cast iron housing supported on tubular bearing arm assembly.



Taper Lock Pulley



Flexibility to change diameter of pulley according to fan shaft. Pulleys with taper lock bush allows for convenient dismantling and maintenance of drive package.



Fan Discharge Collar



Flanged discharge collar to provide easy duct connection.



Accessory High Velocity Filter (HVF) Frame



For fresh air application, factory supplied 75mm HVF track is an option instead of one module casing resulting in shorter overall unit length.



Dampers



Mixing boxes are equipped with opposed blades interconnected outside with return air dampers.

Carrier offers you three easy quick selection steps for 39CQM:

- 1) Determine the unit size based on air flow or coil face area.
 - a. 1.5m/s minimum velocity (cooling or heating).
 - b. 2.65m/s maximum velocity for cooling coil without drift eliminator.
 - c. 4.5m/s maximum velocity for heating coil only.
- 2) Use estimated dimensions to find approximate size of base unit or necessary sections.
- 3) Quick selection of weights of base casing unit and motor drive package weight (if applicable).

STANDARD COIL

| Unit Model | Coil Face Area (m ²) | Coil Tube Diameter (in) | Air Volume (l/s) x 1000 | | | |
|------------|----------------------------------|-------------------------|-------------------------|---------|-------|---------|
| | | | 2 m/s | 2.5 m/s | 3 m/s | 3.5 m/s |
| 39CQM0608 | 0.216 | 1/2" | 0.43 | 0.54 | 0.65 | 0.76 |
| | 0.265 | 3/8" | 0.53 | 0.66 | 0.80 | 0.93 |
| 39CQM0609 | 0.302 | 1/2" | 0.60 | 0.76 | 0.91 | 1.06 |
| | 0.311 | 3/8" | 0.62 | 0.78 | 0.93 | 1.09 |
| 39CQM0610 | 0.347 | 1/2" | 0.69 | 0.87 | 1.04 | 1.21 |
| | 0.357 | 3/8" | 0.71 | 0.89 | 1.07 | 1.25 |
| 39CQM0711 | 0.447 | 1/2" | 0.89 | 1.12 | 1.34 | 1.56 |
| | 0.447 | 3/8" | 0.89 | 1.12 | 1.34 | 1.56 |
| 39CQM0712 | 0.498 | 1/2" | 1.00 | 1.24 | 1.49 | 1.74 |
| | 0.498 | 3/8" | 1.00 | 1.24 | 1.49 | 1.74 |
| 39CQM0811 | 0.559 | 1/2" | 1.12 | 1.40 | 1.68 | 1.96 |
| | 0.536 | 3/8" | 1.07 | 1.34 | 1.61 | 1.88 |
| 39CQM0813 | 0.686 | 1/2" | 1.37 | 1.71 | 2.06 | 2.40 |
| | 0.658 | 3/8" | 1.32 | 1.65 | 1.98 | 2.30 |
| 39CQM0912 | 0.685 | 1/2" | 1.37 | 1.71 | 2.05 | 2.40 |
| | 0.697 | 3/8" | 1.39 | 1.74 | 2.09 | 2.44 |
| 39CQM0913 | 0.754 | 1/2" | 1.51 | 1.89 | 2.26 | 2.64 |
| | 0.768 | 3/8" | 1.54 | 1.92 | 2.30 | 2.69 |
| 39CQM0914 | 0.824 | 1/2" | 1.65 | 2.06 | 2.47 | 2.88 |
| | 0.839 | 3/8" | 1.68 | 2.10 | 2.52 | 2.94 |
| 39CQM1015 | 1.057 | 1/2" | 2.11 | 2.64 | 3.17 | 3.70 |
| | 1.040 | 3/8" | 2.08 | 2.60 | 3.12 | 3.64 |
| 39CQM1016 | 1.139 | 1/2" | 2.28 | 2.85 | 3.42 | 3.99 |
| | 1.122 | 3/8" | 2.24 | 2.80 | 3.36 | 3.93 |
| 39CQM1117 | 1.372 | 1/2" | 2.74 | 3.43 | 4.11 | 4.80 |
| | 1.317 | 3/8" | 2.63 | 3.29 | 3.95 | 4.61 |
| 39CQM1317 | 1.646 | 1/2" | 3.29 | 4.11 | 4.94 | 5.76 |
| | 1.609 | 3/8" | 3.22 | 4.02 | 4.83 | 5.63 |
| 39CQM1318 | 1.760 | 1/2" | 3.52 | 4.40 | 5.28 | 6.16 |
| | 1.721 | 3/8" | 3.44 | 4.30 | 5.16 | 6.02 |
| 39CQM1320 | 1.989 | 1/2" | 3.98 | 4.97 | 5.97 | 6.96 |
| | 1.945 | 3/8" | 3.89 | 4.86 | 5.83 | 6.81 |
| 39CQM1322 | 2.217 | 1/2" | 4.43 | 5.54 | 6.65 | 7.76 |
| | 2.168 | 3/8" | 4.34 | 5.42 | 6.50 | 7.59 |

Note:

For cooling application of face velocity more than 2.65m/s, drift eliminators is recommended to avoid moisture carry over under normal operating condition.

STANDARD COIL (Con't)

| Unit Model | Coil Face Area (m ²) | Coil Tube Diameter (in) | Air Volume (l/s) x 1000 | | | |
|------------|----------------------------------|-------------------------|-------------------------|---------|-------|---------|
| | | | 2 m/s | 2.5 m/s | 3 m/s | 3.5 m/s |
| 39CQM1418 | 1.860 | 1/2" | 3.72 | 4.65 | 5.58 | 6.51 |
| 39CQM1420 | 2.100 | 1/2" | 4.20 | 5.25 | 6.30 | 7.35 |
| 39CQM1421 | 2.220 | 1/2" | 4.44 | 5.55 | 6.66 | 7.77 |
| 39CQM1422 | 2.340 | 1/2" | 4.68 | 5.85 | 7.02 | 8.19 |
| 39CQM1518 | 2.050 | 1/2" | 4.10 | 5.13 | 6.15 | 7.18 |
| 39CQM1521 | 2.450 | 1/2" | 4.90 | 6.13 | 7.35 | 8.58 |
| 39CQM1522 | 2.590 | 1/2" | 5.18 | 6.48 | 7.77 | 9.07 |
| 39CQM1524 | 2.850 | 1/2" | 5.70 | 7.13 | 8.55 | 9.98 |
| 39CQM1525 | 2.990 | 1/2" | 5.98 | 7.48 | 8.97 | 10.47 |
| 39CQM1621 | 2.570 | 1/2" | 5.14 | 6.43 | 7.71 | 9.00 |
| 39CQM1622 | 2.710 | 1/2" | 5.42 | 6.78 | 8.13 | 9.49 |
| 39CQM1624 | 2.990 | 1/2" | 5.98 | 7.48 | 8.97 | 10.47 |
| 39CQM1625 | 3.130 | 1/2" | 6.26 | 7.83 | 9.39 | 10.96 |
| 39CQM1822 | 3.080 | 1/2" | 6.16 | 7.70 | 9.24 | 10.78 |
| 39CQM1824 | 3.400 | 1/2" | 6.80 | 8.50 | 10.20 | 11.90 |
| 39CQM1825 | 3.560 | 1/2" | 7.12 | 8.90 | 10.68 | 12.46 |
| 39CQM2025 | 3.983 | 1/2" | 7.97 | 9.96 | 11.95 | 13.94 |
| 39CQM2125 | 4.125 | 1/2" | 8.25 | 10.31 | 12.37 | 14.44 |
| 39CQM2226 | 4.606 | 1/2" | 9.21 | 11.52 | 13.82 | 16.12 |
| 39CQM2230 | 5.394 | 1/2" | 10.79 | 13.48 | 16.18 | 18.88 |
| 39CQM2234 | 6.181 | 1/2" | 12.36 | 15.45 | 18.54 | 21.63 |
| 39CQM2330 | 5.568 | 1/2" | 11.14 | 13.92 | 16.70 | 19.49 |
| 39CQM2334 | 6.380 | 1/2" | 12.76 | 15.95 | 19.14 | 22.33 |
| 39CQM2434 | 6.779 | 1/2" | 13.56 | 16.95 | 20.34 | 23.73 |
| 39CQM2634 | 7.377 | 1/2" | 14.75 | 18.44 | 22.13 | 25.82 |
| 39CQM2636 | 7.847 | 1/2" | 15.69 | 19.62 | 23.54 | 27.47 |

Note:

For cooling application of face velocity more than 2.65m/s, drift eliminators is recommended to avoid moisture carry over under normal operating condition.

COIL WITH HEATPIPE

| Unit Model | Coil Face Area (m ²) | Coil Tube Diameter (in) | Air Volume (l/s) x 1000 | | | |
|------------|----------------------------------|-------------------------|-------------------------|---------|-------|---------|
| | | | 2 m/s | 2.5 m/s | 3 m/s | 3.5 m/s |
| 39CQM0608 | 0.213 | 1/2" | 0.43 | 0.53 | 0.64 | 0.75 |
| | 0.219 | 3/8" | 0.44 | 0.55 | 0.66 | 0.77 |
| 39CQM0609 | 0.258 | 1/2" | 0.52 | 0.64 | 0.77 | 0.90 |
| | 0.265 | 3/8" | 0.53 | 0.66 | 0.80 | 0.93 |
| 39CQM0610 | 0.302 | 1/2" | 0.60 | 0.76 | 0.91 | 1.06 |
| | 0.311 | 3/8" | 0.62 | 0.78 | 0.93 | 1.09 |
| 39CQM0711 | 0.396 | 1/2" | 0.79 | 0.99 | 1.19 | 1.39 |
| | 0.396 | 3/8" | 0.79 | 0.99 | 1.19 | 1.39 |
| 39CQM0712 | 0.447 | 1/2" | 0.89 | 1.12 | 1.34 | 1.56 |
| | 0.447 | 3/8" | 0.89 | 1.12 | 1.34 | 1.56 |
| 39CQM0811 | 0.495 | 1/2" | 0.99 | 1.24 | 1.49 | 1.73 |
| | 0.475 | 3/8" | 0.95 | 1.19 | 1.43 | 1.66 |
| 39CQM0813 | 0.622 | 1/2" | 1.24 | 1.56 | 1.87 | 2.18 |
| | 0.597 | 3/8" | 1.19 | 1.49 | 1.79 | 2.09 |
| 39CQM0912 | 0.615 | 1/2" | 1.23 | 1.54 | 1.84 | 2.15 |
| | 0.626 | 3/8" | 1.25 | 1.56 | 1.88 | 2.19 |
| 39CQM0913 | 0.685 | 1/2" | 1.37 | 1.71 | 2.05 | 2.40 |
| | 0.697 | 3/8" | 1.39 | 1.74 | 2.09 | 2.44 |
| 39CQM0914 | 0.754 | 1/2" | 1.51 | 1.89 | 2.26 | 2.64 |
| | 0.768 | 3/8" | 1.54 | 1.92 | 2.30 | 2.69 |
| 39CQM1015 | 0.974 | 1/2" | 1.95 | 2.44 | 2.92 | 3.41 |
| | 0.959 | 3/8" | 1.92 | 2.40 | 2.88 | 3.36 |
| 39CQM1016 | 1.057 | 1/2" | 2.11 | 2.64 | 3.17 | 3.70 |
| | 1.040 | 3/8" | 2.08 | 2.60 | 3.12 | 3.64 |
| 39CQM1117 | 1.276 | 1/2" | 2.55 | 3.19 | 3.83 | 4.47 |
| | 1.225 | 3/8" | 2.45 | 3.06 | 3.68 | 4.29 |
| 39CQM1317 | 1.532 | 1/2" | 3.06 | 3.83 | 4.59 | 5.36 |
| | 1.498 | 3/8" | 3.00 | 3.74 | 4.49 | 5.24 |
| 39CQM1318 | 1.650 | 1/2" | 3.30 | 4.13 | 4.95 | 5.78 |
| | 1.609 | 3/8" | 3.22 | 4.02 | 4.83 | 5.63 |
| 39CQM1320 | 1.870 | 1/2" | 3.74 | 4.68 | 5.61 | 6.55 |
| | 1.833 | 3/8" | 3.67 | 4.58 | 5.50 | 6.42 |
| 39CQM1322 | 2.100 | 1/2" | 4.20 | 5.25 | 6.30 | 7.35 |
| | 2.056 | 3/8" | 4.11 | 5.14 | 6.17 | 7.20 |

Note:

For cooling application of face velocity more than 2.65m/s, drift eliminators is recommended to avoid moisture carry over under normal operating condition.

COIL WITH HEATPIPE (Con't)

| Unit Model | Coil Face Area (m ²) | Coil Tube Diameter (in) | Air Volume (l/s) x 1000 | | | |
|------------|----------------------------------|-------------------------|-------------------------|---------|-------|---------|
| | | | 2 m/s | 2.5 m/s | 3 m/s | 3.5 m/s |
| 39CQM1418 | 1.740 | 1/2" | 3.48 | 4.35 | 5.22 | 6.09 |
| 39CQM1420 | 1.980 | 1/2" | 3.96 | 4.95 | 5.94 | 6.93 |
| 39CQM1421 | 2.100 | 1/2" | 4.20 | 5.25 | 6.30 | 7.35 |
| 39CQM1422 | 2.220 | 1/2" | 4.44 | 5.55 | 6.66 | 7.77 |
| 39CQM1518 | 1.920 | 1/2" | 3.84 | 4.80 | 5.76 | 6.72 |
| 39CQM1521 | 2.320 | 1/2" | 4.64 | 5.80 | 6.96 | 8.12 |
| 39CQM1522 | 2.450 | 1/2" | 4.90 | 6.13 | 7.35 | 8.58 |
| 39CQM1524 | 2.720 | 1/2" | 5.44 | 6.80 | 8.16 | 9.52 |
| 39CQM1525 | 2.850 | 1/2" | 5.70 | 7.13 | 8.55 | 9.98 |
| 39CQM1621 | 2.430 | 1/2" | 4.86 | 6.08 | 7.29 | 8.51 |
| 39CQM1622 | 2.570 | 1/2" | 5.14 | 6.43 | 7.71 | 9.00 |
| 39CQM1624 | 2.850 | 1/2" | 5.70 | 7.13 | 8.55 | 9.98 |
| 39CQM1625 | 2.990 | 1/2" | 5.98 | 7.48 | 8.97 | 10.47 |
| 39CQM1822 | 2.920 | 1/2" | 5.84 | 7.30 | 8.76 | 10.22 |
| 39CQM1824 | 3.240 | 1/2" | 6.48 | 8.10 | 9.72 | 11.34 |
| 39CQM1825 | 3.400 | 1/2" | 6.80 | 8.50 | 10.20 | 11.90 |
| 39CQM2025 | 3.805 | 1/2" | 7.61 | 9.51 | 11.41 | 13.32 |
| 39CQM2125 | 3.941 | 1/2" | 7.88 | 9.85 | 11.82 | 13.79 |
| 39CQM2226 | 4.409 | 1/2" | 8.82 | 11.02 | 13.23 | 15.43 |
| 39CQM2230 | 5.197 | 1/2" | 10.39 | 12.99 | 15.59 | 18.19 |
| 39CQM2234 | 5.984 | 1/2" | 11.97 | 14.96 | 17.95 | 20.94 |
| 39CQM2330 | 5.364 | 1/2" | 10.73 | 13.41 | 16.09 | 18.78 |
| 39CQM2334 | 6.177 | 1/2" | 12.35 | 15.44 | 18.53 | 21.62 |
| 39CQM2434 | 6.563 | 1/2" | 13.13 | 16.41 | 19.69 | 22.97 |
| 39CQM2634 | 7.142 | 1/2" | 14.28 | 17.86 | 21.43 | 25.00 |
| 39CQM2636 | 7.612 | 1/2" | 15.22 | 19.03 | 22.84 | 26.64 |

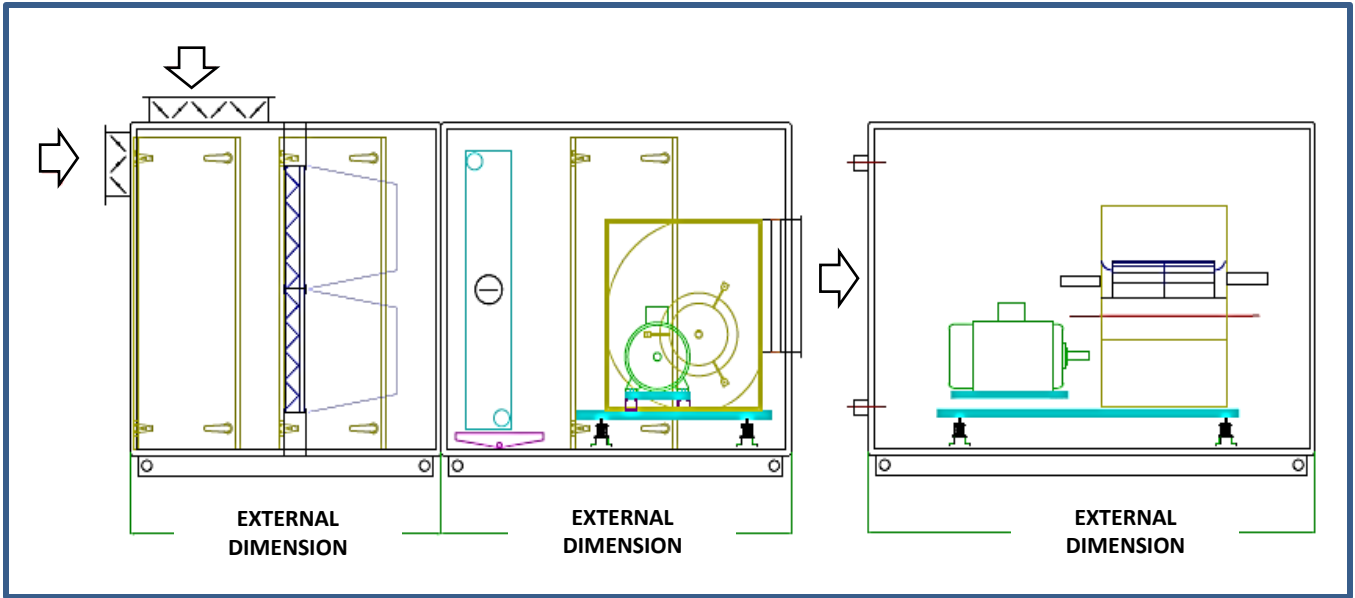
Note:

For application where face velocity exceed 2.65m/s, drift eliminators is recommended to avoid moisture carry over under normal operating condition.



AHU SELECTION PROGRAM

We have made available a computer selection for your application program. Please contact your nearest Carrier Representative for a assistance. Selection based on your "Quick Selection" plus the design parameters on your application.



Horizontal Schematic

External AHU Length

External AHU Length = (Section Length + K)
 where, K = 100mm (50mm casing thickness)

If the AHU module length is more than 2000mm, section will be split into several casing for shipping purpose .

For Example:

39CQM1522, MXB-BF-CCS-FS, Fan Size 500, Horizontal AHU with 50mm casing thickness

Unit will be split into two section:-

- 1) MXB-BF: 800mm + 600mm = 1400mm + K(100) = 1500mm
- 2) CCS-FS: 600mm + 1100mm = 1700mm + K(100) = 1800mm

Total AHU Length = 3300mm

External AHU Width

External AHU Width = (Module Width + K)mm
 where, K = 100mm (50mm casing thickness)

For Example:

39GQM1522, MXB-BF-CCS-FS, Fan Size 500, Horizontal AHU with 50mm casing thickness

AHU Width = 2200mm + K(100mm) = 2300mm

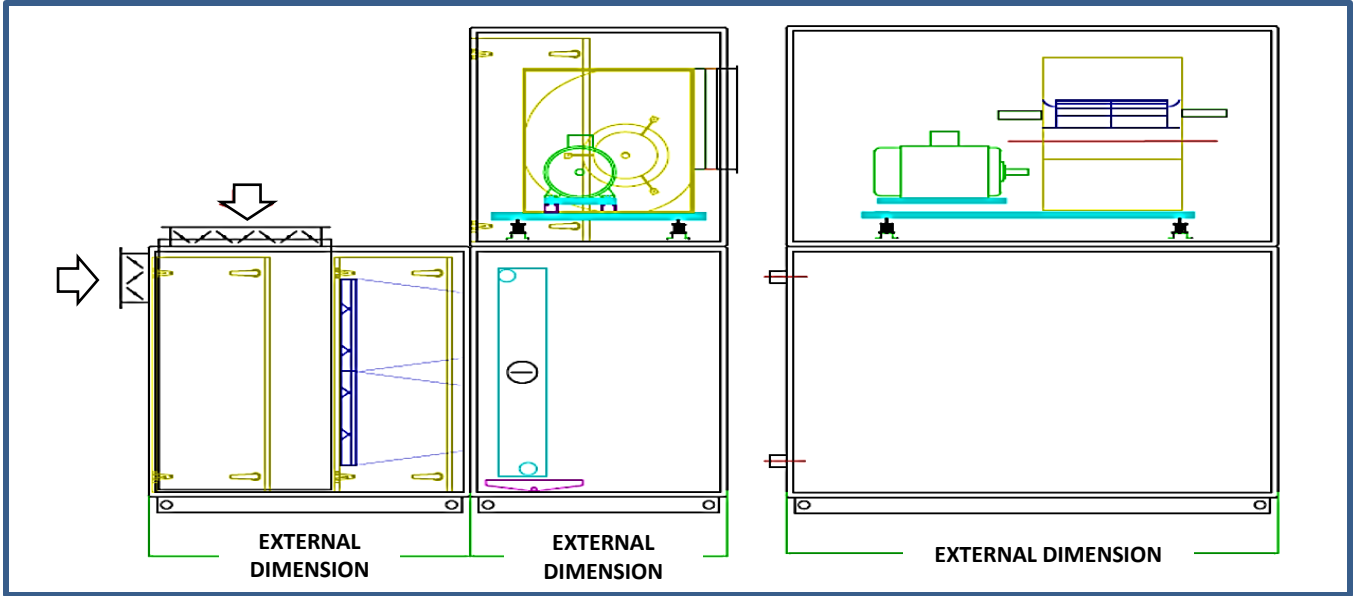
External AHU Height

Horizontal AHU Height = (Module Height + K + 100)mm
 where, K = 100mm (50mm casing thickness)

For Example:

39CQM1522, MXB-BF-CCS-FS, Fan Size 500, Horizontal AHU with 50mm casing thickness

AHU Height = (1500mm + 100mm + 100mm) = 1700mm



Vertical Schematic

External AHU Length

External AHU Length = (Section Length + K)
 where, K = 100mm (50mm casing thickness)

If the AHU module length is more than 2000mm, section will be split into several casing for shipping purpose .

For Example:

39CQM1522, MXB-BF-CCS-FS, Fan Size 500, Vertical AHU with 50mm casing thickness

Unit will be split into two section:-

- 1) MXB-BF: 800mm + 600mm = 1400mm + K(100) = 1500mm
- 2) FS: 1100mm = 1100mm + K(100) = 1200mm

Total AHU Length = 2700mm

Note:

- 1) The fan is on top of the coil section, just apply the fan section length for calculation.
- 2) Add 100mm incase of external filter track.

External AHU Width

External AHU Width = (Module Width + K)mm
 where, K = 100mm (50mm casing thickness)

For Example:

39GQM1522, MXB-BF-CCS-FS, Fan Size 500, Horizontal AHU with 50mm casing thickness

AHU Width = 2200mm + K(100mm) = 2300mm

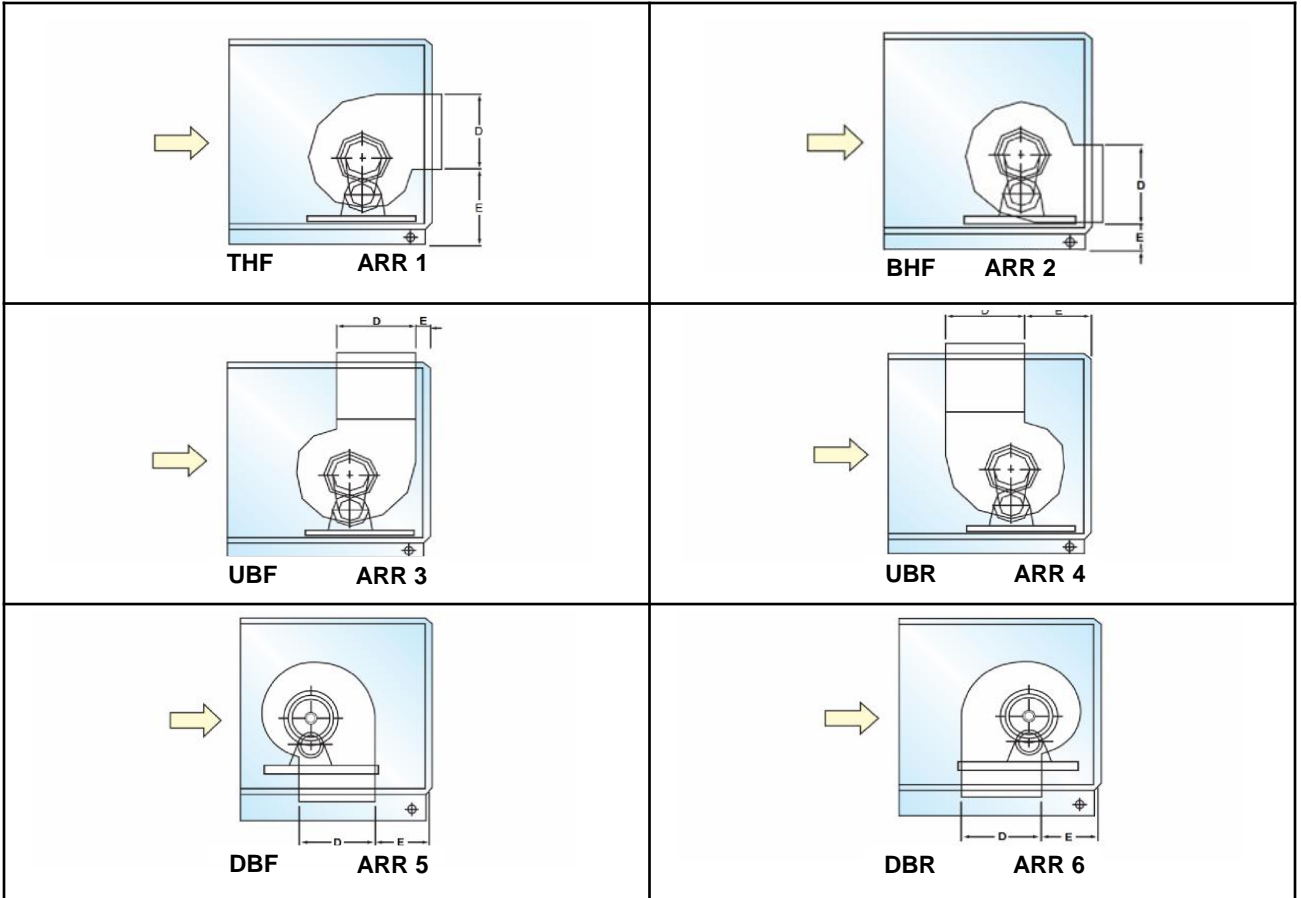
External AHU Height

Vertical AHU = (Module Height + Fan Section Vertical Height + 2K + 100)mm
 where, K = 100mm (50mm casing thickness)

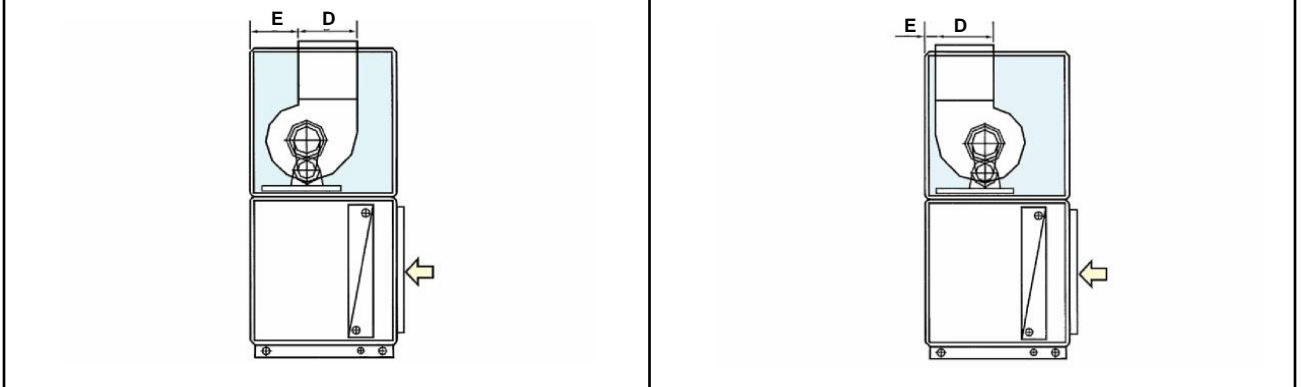
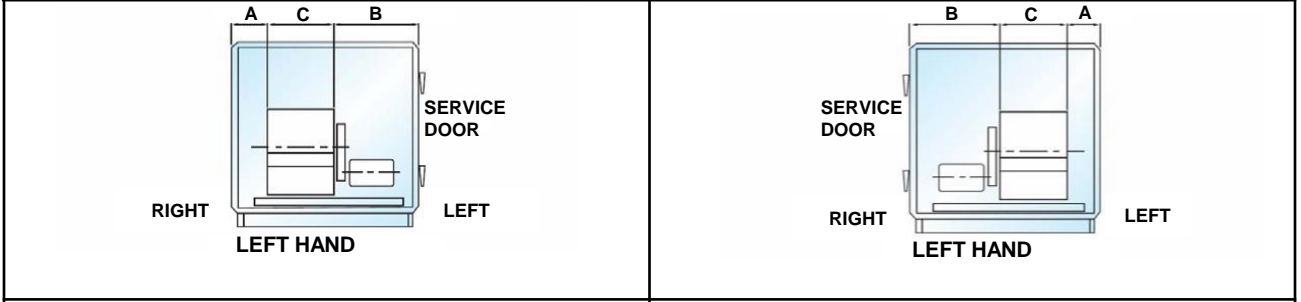
For Example:

39CQM1522, MXB-BF-CCS-FS, Fan Size 500, Vertical AHU with 50mm casing thickness

AHU Height = (1500mm + 1200mm + 200mm + 100mm) = 3000mm



SIDE ELEVATION



FRONT ELEVATION



Carrier Technologies

> > BASE UNIT COIL WEIGHT (50mm SECTION WEIGHT)

| 3G AHU Size | Fan Size | Mixing Box Section | | | Filter Section | | | Coil Section | | Heater Section | Fan Section | | Diffuser Section | Discharge Section with Damper | Plenum Access | |
|---------------------------------|----------|--------------------|-------------------|-----------------------|----------------|------------|-------------|---------------------------|------------------------|----------------|-------------|------------|------------------|-------------------------------|---------------|--|
| | | Mixing Box | Double Mixing Box | Economized Mixing Box | Bag Filter/LVF | HVF Filter | HEPA Filter | Cooling/Dual (Horizontal) | Hot Water (Horizontal) | | Horizontal | Vertical | | | | |
| Unit size | Fan Size | MXB | DBL MXB | ECN MXB | BF / LVF | HVF | HEPA | CW | HW | HTR | FCF or BCF | FCF or BCF | DIF | DISC | ACS | |
| 50mm Section weight (kg) | | | | | | | | | | | | | | | | |
| 0608 | 160 | 38 | 68 | 38 | 45 | 23 | 78 | 41 | 22 | 23 | 50 | 69 | 25 | 44 | 45 | |
| | 180 | 38 | 68 | 38 | 45 | 23 | 78 | 41 | 22 | 23 | 50 | 69 | 25 | 44 | 45 | |
| 0609 | 180 | 41 | 71 | 41 | 47 | 24 | 82 | 44 | 22 | 24 | 54 | 72 | 26 | 46 | 47 | |
| | 200 | 41 | 71 | 41 | 47 | 24 | 82 | 44 | 22 | 24 | 62 | 72 | 26 | 46 | 47 | |
| 0711 | 200 | 49 | 82 | 49 | 55 | 28 | 96 | 52 | 27 | 28 | 75 | 84 | 31 | 56 | 55 | |
| | 225 | 49 | 82 | 49 | 55 | 28 | 96 | 52 | 27 | 28 | 75 | 84 | 31 | 56 | 55 | |
| 0811 | 225 | 52 | 86 | 52 | 57 | 29 | 101 | 53 | 27 | 29 | 78 | 88 | 32 | 60 | 57 | |
| | 250 | 52 | 86 | 52 | 57 | 29 | 101 | 53 | 27 | 29 | 78 | 88 | 32 | 60 | 57 | |
| 0912 | 250 | 57 | 92 | 57 | 62 | 31 | 107 | 57 | 29 | 31 | 86 | 93 | 34 | 67 | 62 | |
| | 280 | 57 | 92 | 57 | 62 | 31 | 107 | 57 | 29 | 31 | 86 | 93 | 34 | 67 | 62 | |
| 0913 | 280 | 69 | 95 | 69 | 64 | 33 | 112 | 60 | 31 | 33 | 101 | 97 | 36 | 80 | 64 | |
| | 315 | 69 | 95 | 69 | 64 | 33 | 112 | 60 | 31 | 33 | 101 | 97 | 36 | 80 | 64 | |
| 0914 | 315 | 71 | 113 | 71 | 66 | 34 | 115 | 61 | 31 | 34 | 114 | 99 | 37 | 82 | 66 | |
| | 355 | 71 | 113 | 71 | 66 | 34 | 115 | 61 | 31 | 34 | 114 | 99 | 37 | 82 | 66 | |
| 1015 | 355 | 78 | 121 | 78 | 70 | 35 | 122 | 65 | 33 | 35 | 124 | 106 | 39 | 90 | 70 | |
| | 400 | 78 | 121 | 78 | 70 | 35 | 122 | 65 | 33 | 35 | 124 | 106 | 39 | 90 | 70 | |
| 1117 | 400 | 89 | 133 | 89 | 76 | 39 | 137 | 70 | 36 | 39 | 143 | 118 | 43 | 104 | 76 | |
| | 450 | 89 | 133 | 89 | 76 | 39 | 137 | 70 | 36 | 39 | 143 | 118 | 43 | 104 | 76 | |
| 1317 | 450 | 98 | 142 | 98 | 81 | 41 | 144 | 74 | 37 | 41 | 153 | 124 | 45 | 116 | 81 | |
| | 450 | 98 | 142 | 98 | 81 | 41 | 144 | 74 | 37 | 41 | 153 | 124 | 45 | 116 | 81 | |
| 1418 | 450 | 131 | 148 | 105 | 85 | 43 | 151 | 77 | 39 | 43 | 189 | 156 | 47 | 154 | 85 | |
| | 500 | 131 | 148 | 105 | 85 | 43 | 151 | 77 | 39 | 43 | 189 | 156 | 47 | 154 | 85 | |
| 1420 | 500 | 140 | 154 | 112 | 89 | 45 | 158 | 81 | 41 | 45 | 202 | 164 | 99 | 165 | 89 | |
| | 560 | 140 | 154 | 112 | 89 | 45 | 158 | 81 | 41 | 45 | 202 | 164 | 99 | 165 | 89 | |
| 1621 | 560 | 157 | 169 | 128 | 97 | 49 | 172 | 89 | 45 | 49 | 253 | 208 | 108 | 185 | 97 | |
| | 630 | 157 | 169 | 128 | 97 | 49 | 172 | 89 | 45 | 49 | 253 | 208 | 108 | 185 | 97 | |
| 1822 | 630 | 185 | 181 | 141 | 104 | 53 | 184 | 94 | 48 | 53 | 274 | 224 | 115 | 220 | 104 | |
| | 630 | 185 | 181 | 141 | 104 | 53 | 184 | 94 | 48 | 53 | 274 | 224 | 115 | 220 | 104 | |
| 1825 | 630 | 202 | 194 | 153 | 111 | 56 | 201 | 102 | 51 | 56 | 319 | 240 | 124 | 240 | 111 | |
| | 710 | 202 | 194 | 153 | 111 | 56 | 201 | 102 | 51 | 56 | 319 | 240 | 124 | 240 | 111 | |
| 2025 | 630 | 214 | 294 | 164 | 115 | 58 | 207 | 105 | 53 | 58 | 334 | 256 | 128 | 256 | 115 | |
| | 710 | 214 | 294 | 164 | 115 | 58 | 207 | 105 | 53 | 58 | 334 | 256 | 128 | 256 | 115 | |
| 2125 | 710 | 250 | 301 | 169 | 117 | 59 | 211 | 106 | 53 | 59 | 360 | 268 | 130 | 299 | 117 | |
| | 800 | 250 | 301 | 169 | 117 | 59 | 211 | 106 | 53 | 59 | 360 | 268 | 130 | 299 | 117 | |
| 2226 | 710 | 263 | 312 | 179 | 122 | 62 | 219 | 110 | 56 | 62 | 377 | 277 | 135 | 315 | 122 | |
| | 800 | 263 | 312 | 179 | 122 | 62 | 219 | 110 | 56 | 62 | 377 | 277 | 135 | 315 | 122 | |
| 2230 | 800 | 286 | 327 | 199 | 134 | 68 | 234 | 122 | 62 | 68 | 455 | 344 | 149 | 344 | 134 | |
| | 900 | 286 | 327 | 199 | 134 | 68 | 234 | 122 | 62 | 68 | 455 | 344 | 149 | 344 | 134 | |
| 2234 | 800 | 315 | 359 | 220 | 148 | 74 | 258 | 137 | 69 | 74 | 504 | 378 | 166 | 378 | 148 | |
| | 900 | 315 | 359 | 220 | 148 | 74 | 258 | 137 | 69 | 74 | 504 | 378 | 166 | 378 | 148 | |
| 2634 | 900 | 347 | 383 | 246 | 156 | 78 | 273 | 142 | 71 | 78 | 590 | 420 | 173 | 420 | 156 | |
| | 1000 | 347 | 383 | 246 | 156 | 78 | 273 | 142 | 71 | 78 | 590 | 420 | 173 | 420 | 156 | |

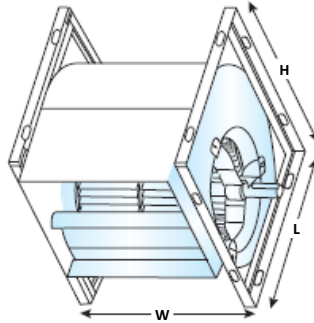
Note: Estimated weight in kg.

| POWER | | 2P | | | | 4P | | | | 6P | | | | 8P | | | |
|-------|-------|-------|------------|------|-------------|-------|------------|------|-------------|-------|------------|------|-------------|-------|------------|------|-------------|
| KW | HP | FRAME | RPM (50Hz) | EFF | WEIGHT (kg) | FRAME | RPM (50Hz) | EFF | WEIGHT (kg) | FRAME | RPM (50Hz) | EFF | WEIGHT (kg) | FRAME | RPM (50Hz) | EFF | WEIGHT (kg) |
| 0.4 | 0.5 | 71 | 2810 | 75.0 | | 71 | 1395 | 71.5 | | 80 | 925 | 66.0 | | 90S | 710 | 64.5 | |
| 0.6 | 0.8 | 71 | 2755 | 75.0 | | 80 | 1405 | 71.5 | | 80 | 915 | 68.0 | | 90L | 695 | 70.0 | |
| 0.8 | 1.0 | 80 | 2805 | 78.0 | | 80 | 1405 | 76.5 | | 90S | 940 | 74.0 | | 100L | 700 | 68.0 | |
| 1.1 | 1.5 | 80 | 2810 | 80.5 | | 90S | 1415 | 74.5 | | 90L | 940 | 75.0 | | 100L | 690 | 74.5 | |
| 1.5 | 2.0 | 90S | 2825 | 81.0 | | 90L | 1400 | 77.0 | | 100L | 930 | 75.0 | | 112M | 705 | 75.5 | |
| 2.2 | 3.0 | 90L | 2840 | 83.5 | | 100L | 1425 | 81.0 | | 112M | 950 | 81.0 | | 132S | 705 | 81.5 | |
| 3.0 | 4.0 | 100L | 2865 | 85.0 | | 100L | 1435 | 83.5 | | 132S | 955 | 85.0 | | 132M | 715 | 82.5 | |
| 3.7 | 5.0 | 112M | 2870 | 85.5 | | 112M | 1445 | 84.5 | | 132M | 955 | 83.0 | | 160M | 720 | 84.0 | |
| 4.0 | 5.5 | 112M | 2870 | 86.0 | | 112M | 1445 | 86.0 | | 132M | 950 | 85.0 | | 160M | 720 | 84.5 | |
| 5.5 | 7.5 | 132S | 2905 | 87.0 | | 132S | 1445 | 86.0 | | 132M | 960 | 87.5 | | 160M | 720 | 85.5 | |
| 7.5 | 10.0 | 132S | 2880 | 88.0 | | 132M | 1450 | 88.5 | | 160M | 975 | 88.0 | | 160L | 720 | 86.0 | |
| 11.0 | 15.0 | 160M | 2940 | 89.0 | | 160M | 1455 | 89.5 | | 160L | 970 | 89.0 | | 180LC | 730 | 89.0 | |
| 15.0 | 20.0 | 160M | 2925 | 90.5 | | 160L | 1460 | 90.5 | | 180LC | 970 | 90.0 | | 200LC | 730 | 89.5 | |
| 18.5 | 25.0 | 160L | 2930 | 91.5 | | 180MC | 1450 | 91.0 | | 200LC | 970 | 91.0 | | 225SC | 730 | 90.0 | |
| 22.0 | 30.0 | 180MA | 2930 | 92.0 | | 180LC | 1460 | 91.5 | | 200LC | 975 | 92.5 | | 225MC | 730 | 91.0 | |
| 30.0 | 40.0 | 200LA | 2960 | 92.0 | | 200LC | 1470 | 92.5 | | 225MC | 980 | 91.5 | | 250SC | 730 | 90.5 | |
| 37.0 | 50.0 | 200LA | 2950 | 92.5 | | 225SC | 1470 | 92.5 | | 250SC | 980 | 92.5 | | 250MC | 730 | 91.0 | |
| 45.0 | 60.0 | 225MA | 2950 | 93.0 | | 225MC | 1470 | 92.5 | | 250MC | 980 | 92.5 | | 280SC | 725 | 92.0 | |
| 55.0 | 75.0 | 250SA | 2960 | 92.0 | | 250SC | 1480 | 93.4 | | 280SC | 970 | 92.4 | | 280MC | 730 | 92.4 | |
| 75.0 | 100.0 | 250MA | 2950 | 94.0 | | 250MC | 1480 | 94.5 | | 280MC | 975 | 93.0 | | 315SC | 730 | 93.0 | |

Notes:

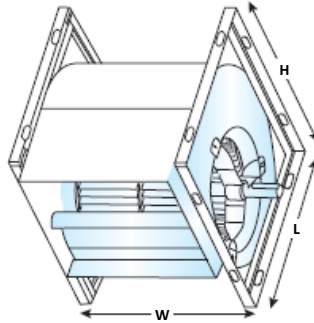
- Motor weight is based on 415V/3Ø/50Hz induction type TEFC foot-mounted motor.
- Motor is suitable for direct on-line / reduced voltage starting mechanism (except STAR-DELTA).
- Motors 3hp and smaller are STAR connected and motor 4hp and larger are DELTA connected.
- Standard motor shall be as per IEC standard IP55 enclosure with TEFC Class F insulation and B temperature rise complying with BS2757.
- Maximum ambient temperature 40°C.
- For derivation of motor kW from fan BkW use.
- Motor kW = Fan BkW x A, where A = 1.20 if BkW < 10kW
A = 1.15 if BkW > 10kW
- Please refer to your nearest Carrier representatives for special motor voltages or application.

FORWARD CURVED TYPE



| Fan Model | Weight (Kg) | Fan Max RPM | Shaft Dia (mm) | Width, W (mm) | Height, H (mm) | Length, L (mm) | Maximum BkW |
|------------|-------------|-------------|----------------|---------------|----------------|----------------|-------------|
| ADH 160 R | 6.6 | 4,200 | 20 h7 | 245 | 300 | 259 | 3.0 |
| ADH 180 R | 7.8 | 4,000 | 20 h7 | 269 | 336 | 294 | 3.0 |
| ADH 200 R | 9.1 | 3,800 | 20 h7 | 306 | 370 | 306 | 4.0 |
| ADH 225 R | 10.7 | 3,400 | 20 h7 | 338 | 415 | 345 | 4.0 |
| ADH 250 R | 13.0 | 2,800 | 20 h7 | 372 | 461 | 381 | 4.0 |
| ADH 280 R | 18.0 | 2,500 | 25 h7 | 421 | 518 | 429 | 5.5 |
| ADH 315 R | 22.0 | 2,100 | 25 h7 | 464 | 578 | 480 | 5.5 |
| ADH 355 R | 29.0 | 1,800 | 30 h7 | 533 | 655 | 544 | 7.5 |
| ADH 400 R | 38.0 | 1,600 | 30 h7 | 587 | 736 | 609 | 7.5 |
| ADH 450 R | 50.0 | 1,400 | 35 h7 | 649 | 827 | 679 | 11.0 |
| ADH 500 R | 65.0 | 1,200 | 35 h7 | 718 | 918 | 748 | 11.0 |
| ADH 560 R | 86.0 | 1,100 | 40 h7 | 815 | 1,030 | 839 | 15.0 |
| ADH 630 R | 106.0 | 900 | 40 h7 | 901 | 1,157 | 940 | 15.0 |
| ADH 710 R | 135.0 | 750 | 50 h7 | 998 | 1,303 | 1,050 | 18.5 |
| ADH 200 K | 12.6 | 3,800 | 20 h7 | 306 | 370 | 306 | 4.0 |
| ADH 225 K | 14.5 | 3,400 | 20 h7 | 338 | 415 | 345 | 4.0 |
| ADH 250 K | 18.0 | 3,000 | 25 h7 | 372 | 461 | 381 | 7.5 |
| ADH 280 K | 24.0 | 2,600 | 30 h7 | 421 | 518 | 429 | 11.0 |
| ADH 315 K | 29.0 | 2,300 | 30 h7 | 464 | 578 | 480 | 11.0 |
| ADH 355 K | 41.0 | 2,000 | 35 h7 | 531 | 655 | 544 | 15.0 |
| ADH 400 K | 52.0 | 1,800 | 35 h7 | 587 | 736 | 613 | 15.0 |
| ADH 450 K | 66.0 | 1,500 | 40 h7 | 649 | 827 | 679 | 15.0 |
| ADH 500 K | 85.0 | 1,300 | 40 h7 | 718 | 918 | 748 | 15.0 |
| ADH 560 K | 134.0 | 1,200 | 50 h7 | 815 | 1,030 | 839 | 18.5 |
| ADH 630 K | 170.0 | 1,000 | 50 h7 | 901 | 1,157 | 940 | 18.5 |
| ADH 710 K | 201.0 | 900 | 50 h7 | 998 | 1,303 | 1,050 | 22.0 |
| ADH 800 K | 249.0 | 800 | 50 h7 | 1,107 | 1,468 | 1,181 | 22.0 |
| ADH 900 K | 306.0 | 700 | 60 h7 | 1,230 | 1,648 | 1,319 | 30.0 |
| ADH 1000 K | 333.0 | 650 | 60 h7 | 1,367 | 1,810 | 1,451 | 37.0 |
| ADH 315 K1 | 30.0 | 2,300 | 30 h7 | 464 | 578 | 480 | 18.5 |
| ADH 355 K1 | 42.0 | 2,000 | 35 h7 | 531 | 655 | 544 | 22.0 |
| ADH 400 K1 | 53.0 | 1,800 | 35 h7 | 587 | 736 | 613 | 22.0 |
| ADH 450 K1 | 67.0 | 1,500 | 40 h7 | 649 | 827 | 679 | 30.0 |
| ADH 500 K1 | 86.0 | 1,300 | 40 h7 | 718 | 918 | 748 | 30.0 |
| ADH 560 K1 | 142.0 | 1,200 | 50 h7 | 815 | 1,030 | 839 | 30.0 |
| ADH 630 K1 | 175.0 | 1,000 | 50 h7 | 901 | 1,157 | 940 | 30.0 |
| ADH 710 K1 | 208.0 | 900 | 60 h7 | 998 | 1,303 | 1,050 | 37.0 |
| ADH 800 K1 | 261.0 | 800 | 60 h7 | 1,107 | 1,468 | 1,181 | 37.0 |
| ADH 900 K1 | 316.0 | 700 | 60 h7 | 1,230 | 1,648 | 1,319 | 45.0 |

FORWARD CURVED TYPE

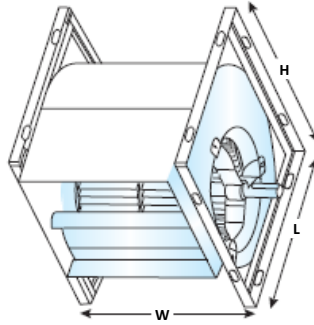


| Fan Model | Weight (Kg) | Fan Max RPM | Shaft Dia (mm) | Width, W (mm) | Height, H (mm) | Length, L (mm) | Maximum BkW |
|-------------|-------------|-------------|----------------|---------------|----------------|----------------|-------------|
| ADH 500 K2 | 105 | 1,300 | 50 h7 | 718 | 918 | 748 | 37.0 |
| ADH 560 K2 | 150 | 1,200 | 50 h7 | 815 | 1,030 | 839 | 45.0 |
| ADH 630 K2 | 180 | 1,000 | 50 h7 | 901 | 1,157 | 940 | 45.0 |
| ADH 710 K2 | 225 | 900 | 60 h7 | 998 | 1,303 | 1,050 | 55.0 |
| ADH 800 K2 | 278 | 800 | 60 h7 | 1,107 | 1,468 | 1,181 | 55.0 |
| ADH 900 K2 | 320 | 700 | 60 h7 | 1,230 | 1,648 | 1,319 | 75.0 |
| ADH 1000 K2 | 360 | 650 | 60 h7 | 1,367 | 1,810 | 1,451 | 75.0 |
| FDA CM 180 | 9.5 | 3,700 | 20g6 | 268 | 336 | 294 | 2.0 |
| FDA CM 200 | 10.5 | 3,300 | 20g6 | 306 | 370 | 306 | 2.5 |
| FDA CM 225 | 12 | 2,900 | 20g6 | 338 | 415 | 348 | 3.0 |
| FDA CM 250 | 15 | 2,700 | 20g6 | 372 | 460 | 383 | 3.0 |
| FDA CM 280 | 20 | 2,400 | 25g6 | 420 | 518 | 432 | 4.0 |
| FDA CM 315 | 24 | 2,100 | 25g6 | 464 | 578 | 480 | 5.5 |
| FDA CM 355 | 32 | 1,800 | 30g6 | 532 | 654 | 548 | 5.5 |
| FDA CM 400 | 41 | 1,600 | 30g6 | 586 | 736 | 612 | 7.5 |
| FDA CM 450 | 51 | 1,400 | 35g6 | 648 | 827 | 681 | 7.5 |
| FDA CM 500 | 74 | 1,200 | 35g6 | 718 | 918 | 750 | 11.0 |
| FDA CM 560 | 93 | 1,100 | 40g6 | 814 | 1,030 | 844 | 11.0 |
| FDA CM 630 | 104 | 900 | 45g6 | 900 | 1,157 | 945 | 15.0 |
| FDA CM 710 | 127 | 800 | 50g6 | 998 | 1,302 | 1,057 | 18.5 |
| FDA TM 250 | 21 | 3,000 | 25g6 | 372 | 460 | 383 | 7.5 |
| FDA TM 280 | 27 | 2,700 | 30g6 | 420 | 518 | 432 | 11.0 |
| FDA TM 315 | 30 | 2,200 | 30g6 | 464 | 578 | 480 | 11.0 |
| FDA TM 355 | 45 | 2,000 | 35g6 | 532 | 654 | 548 | 15.0 |
| FDA TM 400 | 55 | 1,800 | 35g6 | 586 | 736 | 612 | 15.0 |
| FDA TM 450 | 61 | 1,600 | 40g6 | 648 | 827 | 681 | 18.5 |
| FDA TM 500 | 81 | 1,300 | 45g6 | 718 | 918 | 750 | 18.5 |
| FDA TM 560 | 110 | 1,200 | 45g6 | 814 | 1,030 | 844 | 22.0 |
| FDA TM 630 | 140 | 1,000 | 50g6 | 900 | 1,157 | 945 | 22.0 |
| FDA TM 710 | 192 | 900 | 55g6 | 998 | 1,302 | 1,057 | 25.0 |
| FDA TM 800 | 240 | 750 | 55g6 | 1,106 | 1,468 | 1,180 | 25.0 |
| FDA TM 900 | 293 | 650 | 60g6 | 1,230 | 1,648 | 1,319 | 30.0 |
| FDA TM 1000 | 340 | 600 | 70g6 | 1,366 | 1,810 | 1,450 | 37.0 |

>> FAN BLOWER SPECIFICATION



BACKWARD CURVED AIRFOIL TYPE



| Fan Model | Weight (Kg) | Fan Max RPM | Shaft Dia (mm) | Width, W (mm) | Height, H (mm) | Length, L (mm) | Maximum BkW |
|-------------|-------------|-------------|----------------|---------------|----------------|----------------|-------------|
| BDB CM 200 | 13 | 5,200 | 20g6 | 306 | 370 | 306 | 2.0 |
| BDB CM 225 | 16 | 4,500 | 20g6 | 338 | 415 | 348 | 2.2 |
| BDB CM 250 | 20 | 4,000 | 20g6 | 372 | 460 | 383 | 2.5 |
| BDB CM 280 | 24 | 3,500 | 25g6 | 420 | 518 | 432 | 3.0 |
| BDB CM 315 | 27 | 3,100 | 25g6 | 464 | 578 | 480 | 4.0 |
| BDB CM 355 | 41 | 2,700 | 30g6 | 532 | 654 | 548 | 5.0 |
| BDB CM 400 | 45 | 3,200 | 30g6 | 586 | 736 | 612 | 6.0 |
| BDB CM 450 | 62 | 2,900 | 35g6 | 648 | 827 | 681 | 8.0 |
| BDB CM 500 | 81 | 2,500 | 35g6 | 718 | 918 | 750 | 10.0 |
| BDB CM 560 | 110 | 2,200 | 40g6 | 814 | 1,030 | 844 | 12.0 |
| BDB CM 630 | 141 | 2,000 | 45g6 | 900 | 1,157 | 945 | 14.0 |
| BDB CM 710 | 199 | 1,800 | 50g6 | 998 | 1,302 | 1,057 | 18.0 |
| BDB TM 315 | 40 | 4,100 | 30g6 | 464 | 578 | 480 | 8.0 |
| BDB TM 355 | 53 | 3,500 | 35g6 | 532 | 654 | 548 | 11.0 |
| BDB TM 400 | 67 | 3,200 | 35g6 | 586 | 736 | 612 | 14.0 |
| BDB TM 450 | 89 | 2,900 | 40g6 | 648 | 827 | 681 | 18.0 |
| BDB TM 500 | 118 | 2,500 | 45g6 | 718 | 918 | 750 | 20.0 |
| BDB TM 560 | 158 | 2,200 | 45g6 | 814 | 1,030 | 844 | 25.0 |
| BDB TM 630 | 197 | 2,000 | 50g6 | 900 | 1,157 | 945 | 30.0 |
| BDB TM 710 | 251 | 1,800 | 55g6 | 998 | 1,302 | 1,057 | 40.0 |
| BDB TM 800 | 299 | 1,200 | 55g6 | 1,106 | 1,468 | 1,180 | 22.0 |
| BDB TM 900 | 368 | 1,050 | 60g6 | 1,230 | 1,648 | 1,319 | 30.0 |
| BDB TM 1000 | 474 | 1,000 | 70g6 | 1,366 | 1,810 | 1,450 | 35.0 |
| BDB XM 800 | 323 | 1,600 | 65g6 | 1,106 | 1,468 | 1,180 | 50.0 |
| BDB XM 900 | 397 | 1,400 | 70g6 | 1,230 | 1,648 | 1,319 | 60.0 |
| BDB XM 1000 | 512 | 1,300 | 80g6 | 1,366 | 1,810 | 1,450 | 80.0 |

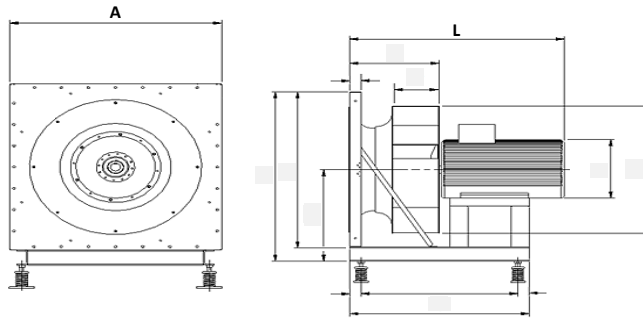
AIRFOIL

| | | | | | | | |
|--------------|-----|-------|------|-------|-------|-------|------|
| RZR 12-225 | 15 | 6,640 | 20k6 | 350 | 433 | 366 | 7.5 |
| RZR 12-280 | 23 | 5,235 | 25k6 | 423 | 532 | 449 | 7.5 |
| RZR 12-315 | 27 | 4,418 | 25k6 | 465 | 596 | 502 | 7.5 |
| RZR 12-355 | 36 | 3,200 | 25k6 | 515 | 669 | 562 | 7.5 |
| RZR 15-400 | 61 | 3,600 | 30k6 | 580 | 750 | 632 | 30.0 |
| RZR 15-450 | 73 | 3,360 | 30k6 | 644 | 840 | 708 | 30.0 |
| RZR 15-500 | 94 | 2,920 | 30k6 | 713 | 930 | 780 | 30.0 |
| RZR 15-560 | 125 | 2,400 | 40k6 | 789 | 1,046 | 884 | 37.0 |
| RZR 15-630 | 149 | 1,880 | 40k6 | 876 | 1,173 | 980 | 37.0 |
| RZR 15-710 | 201 | 2,000 | 50k6 | 973 | 1,324 | 1,104 | 55.0 |
| RZR 15-800G1 | 250 | 1,470 | 50k6 | 1,092 | 1,522 | 1,244 | 55.0 |
| RZR 15-900G1 | 358 | 1,430 | 60k6 | 1,225 | 1,706 | 1,386 | 75.0 |
| RZR 15-1000 | 416 | 1,140 | 60k6 | 1,362 | 1,869 | 1,510 | 75.0 |

BACKWARD CURVED TYPE

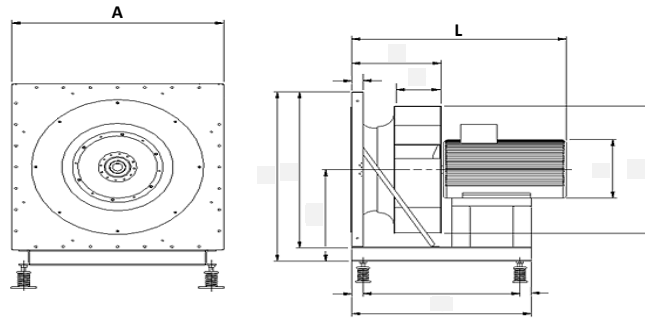
| Fan Model | Weight (Kg) | Fan Max RPM | Shaft Dia (mm) | Width, W (mm) | Height, H (mm) | Length, L (mm) | Maximum BkW |
|-------------|-------------|-------------|----------------|---------------|----------------|----------------|-------------|
| RDH 180 R | 7.1 | 6,800 | 20 h7 | 269 | 336 | 294 | 2.2 |
| RDH 200 R | 8.5 | 6,000 | 20 h7 | 306 | 370 | 306 | 3.0 |
| RDH 225 R | 9.9 | 5,800 | 20 h7 | 338 | 415 | 345 | 4.0 |
| RDH 250 R | 15.7 | 4,600 | 20 h7 | 372 | 461 | 381 | 4.0 |
| RDH 280 R | 21.0 | 4,000 | 25 h7 | 421 | 518 | 429 | 5.5 |
| RDH 315 R | 25.0 | 3,500 | 25 h7 | 464 | 578 | 480 | 5.5 |
| RDH 355 R | 34.0 | 3,300 | 30 h7 | 533 | 655 | 544 | 7.5 |
| RDH 400 R | 42.0 | 2,700 | 30 h7 | 587 | 736 | 609 | 7.5 |
| RDH 450 R | 57.0 | 2,500 | 35 h7 | 649 | 827 | 679 | 11.0 |
| RDH 500 R | 70.0 | 2,100 | 35 h7 | 718 | 918 | 748 | 11.0 |
| RDH 560 R | 92.0 | 1,950 | 40 h7 | 815 | 1,030 | 839 | 15.0 |
| RDH 630 R | 119.0 | 1,600 | 40 h7 | 901 | 1,157 | 940 | 15.0 |
| RDH 710 R | 165.0 | 1,300 | 50 h7 | 998 | 1,303 | 1,050 | 15.0 |
| RDH 200 K | 11.8 | 6,800 | 20 h7 | 306 | 370 | 306 | 3.0 |
| RDH 225 K | 13.6 | 6,000 | 20 h7 | 338 | 415 | 345 | 4.0 |
| RDH 250 K | 21.0 | 5,400 | 25 h7 | 372 | 461 | 381 | 5.5 |
| RDH 280 K | 28.0 | 4,700 | 30 h7 | 421 | 518 | 429 | 7.5 |
| RDH 315 K | 32.0 | 4,100 | 30 h7 | 464 | 578 | 480 | 7.5 |
| RDH 355 K | 46.0 | 3,800 | 35 h7 | 531 | 655 | 544 | 11.0 |
| RDH 400 K | 57.0 | 3,100 | 35 h7 | 587 | 736 | 613 | 15.0 |
| RDH 450 K | 73.0 | 2,800 | 40 h7 | 649 | 827 | 679 | 15.0 |
| RDH 500 K | 90.0 | 2,350 | 40 h7 | 718 | 918 | 748 | 15.0 |
| RDH 560 K | 141.0 | 2,100 | 50 h7 | 815 | 1,030 | 839 | 18.5 |
| RDH 630 K | 173.0 | 1,700 | 50 h7 | 901 | 1,157 | 940 | 18.5 |
| RDH 710 K | 220.0 | 1,500 | 50 h7 | 998 | 1,303 | 1,050 | 22.0 |
| RDH 800 K | 270.0 | 1,200 | 50 h7 | 1,107 | 1,468 | 1,181 | 22.0 |
| RDH 900 K | 343.0 | 1,100 | 60 h7 | 1,230 | 1,648 | 1,319 | 30.0 |
| RDH 1000 K | 415.0 | 1,000 | 60 h7 | 1,367 | 1,810 | 1,451 | 37.0 |
| RDH 315 K1 | 34.0 | 4,500 | 30 h7 | 464 | 578 | 480 | 11.0 |
| RDH 355 K1 | 47.0 | 4,000 | 35 h7 | 531 | 655 | 544 | 15.0 |
| RDH 400 K1 | 58.0 | 3,500 | 35 h7 | 587 | 736 | 613 | 22.0 |
| RDH 450 K1 | 75.0 | 3,200 | 40 h7 | 649 | 827 | 679 | 30.0 |
| RDH 500 K1 | 92.0 | 2,650 | 40 h7 | 718 | 918 | 748 | 30.0 |
| RDH 560 K1 | 148.0 | 2,400 | 50 h7 | 815 | 1,030 | 839 | 30.0 |
| RDH 630 K1 | 180.0 | 200 | 50 h7 | 901 | 1,157 | 940 | 30.0 |
| RDH 710 K1 | 240.0 | 1,700 | 60 h7 | 998 | 1,303 | 1,050 | 37.0 |
| RDH 800 K1 | 297.0 | 1,400 | 60 h7 | 1,107 | 1,468 | 1,181 | 37.0 |
| RDH 900 K1 | 355.0 | 1,250 | 60 h7 | 1,230 | 1,648 | 1,319 | 45.0 |
| RDH 500 K2 | 90.0 | 2,350 | 50 h7 | 718 | 918 | 748 | 37.0 |
| RDH 560 K2 | 141.0 | 2,100 | 50 h7 | 815 | 1,030 | 839 | 37.0 |
| RDH 630 K2 | 173.0 | 1,700 | 50 h7 | 901 | 1,157 | 940 | 45.0 |
| RDH 710 K2 | 220.0 | 1,500 | 60 h7 | 998 | 1,303 | 1,050 | 55.0 |
| RDH 800 K2 | 270.0 | 1,200 | 60 h7 | 1,107 | 1,468 | 1,181 | 55.0 |
| RDH 900 K2 | 343.0 | 1,100 | 60 h7 | 1,230 | 1,648 | 1,319 | 75.0 |
| RDH 1000 K2 | 415.0 | 1,000 | 60 h7 | 1,367 | 1,810 | 1,451 | 75.0 |

>> PLENUM/PLUG FAN



| Access Plenum | Fan Model | Motor frame size | Height A (mm) | Length L (mm) | Fan Section Length |
|---------------|------------|------------------|---------------|---------------|--------------------|
| 200 | RLM56-2528 | D71 | 390 | 486 | 6 |
| | | D80 | | 514 | 7 |
| | | D90 | | 551 | 7 |
| | | D100 | | 584 | 8 |
| 200 | RLM56-2831 | D80 | 430 | 534 | 7 |
| | | D90 | | 571 | 7 |
| | | D100 | | 604 | 8 |
| | | D112 | | 606 | 8 |
| 200 | RLM56-3135 | D80 | 470 | 554 | 7 |
| | | D90 | | 591 | 8 |
| | | D100 | | 624 | 8 |
| | | D112 | | 643 | 8 |
| 200 | RLM56-3540 | D80 | 514 | 694 | 8 |
| | | D90 | | 621 | 8 |
| | | D100 | | 654 | 8 |
| | | D112 | | 656 | 8 |
| 300 | RLM56-4045 | D132 | 582 | 723 | 9 |
| | | D90 | | 646 | 8 |
| | | D100 | | 679 | 8 |
| | | D132 | | 748 | 9 |
| 300 | RLM56-4550 | D90 | 645 | 673 | 9 |
| | | D100 | | 706 | 9 |
| | | D112 | | 708 | 9 |
| | | D132 | | 775 | 10 |
| 300 | RLM56-5056 | D160 | 715 | 833 | 11 |
| | | D100 | | 716 | 10 |
| | | D112 | | 718 | 10 |
| | | D132 | | 785 | 10 |
| 400 | RLM56-5663 | D160 | 790 | 880 | 11 |
| | | D112 | | 759 | 11 |
| | | D132 | | 826 | 11 |
| | | D160 | | 921 | 12 |
| 400 | RLM56-6371 | D132 | 875 | 869 | 12 |
| | | D160 | | 964 | 12 |
| | | D180 | | 993 | 12 |
| | | D132 | | 914 | 13 |
| 400 | RLM56-7180 | D160 | 975 | 1,009 | 13 |
| | | D180 | | 1,084 | 13 |
| | | D180 | | 1,063 | 15 |
| | | D160 | | 1,121 | 16 |
| 500 | RLM56-8090 | D180 | 1,095 | 1,138 | 15 |
| | | D200 | | 1,194 | 15 |
| | | D200 | | 1,121 | 16 |
| | | D180 | | 1,196 | 16 |
| 500 | RLM56-9010 | D200 | 1,230 | 1,252 | 16 |
| | | D225 | | 1,290 | 16 |
| | | D225 | | 1,266 | 18 |
| | | D200 | | 1,321 | 18 |
| 600 | RLM56-1011 | D225 | 1,360 | 1,360 | 18 |
| | | D250 | | 1,453 | 18 |
| | | D280 | | 1,530 | 19 |
| | | D200 | | 1,462 | 20 |
| 700 | RLM55-1112 | D225 | 1,520 | 1,488 | 20 |
| | | D250 | | 1,576 | 20 |
| | | D280 | | 1,608 | 20 |
| | | D250 | | 1,654 | 23 |
| 700 | RLM55-1214 | D250 | 1,700 | 1,736 | 23 |
| | | D250 | | 1,736 | 23 |

>> PLENUM/PLUG FAN



| Access Plenum | Fan Model | Motor frame size | Height A (mm) | Length L (mm) | Fan Section Length |
|---------------|---------------|------------------|---------------|---------------|--------------------|
| 300 | BNB315D | D71-D90 | 490 | 586 | 8 |
| | | D100-D112 | | 635 | 8 |
| 400 | BNB355D | D80-D100 | 530 | 643 | 8 |
| | | D112-D132 | | 740 | 10 |
| 400 | BNB400D | D90-D112 | 580 | 693 | 9 |
| | | D132-D160 | | 903 | 12 |
| 500 | BNB450D | D90-D112 | 630 | 743 | 10 |
| | | D132-D160 | | 953 | 12 |
| 500 | BNB500D | D90-D112 | 700 | 784 | 10 |
| | | D132-D160 | | 994 | 13 |
| 600 | BNB560D | D100-D132 | 790 | 900 | 11 |
| | | D160-D180 | | 1,088 | 14 |
| 700 | BNB630D | D100-D132 | 890 | 945 | 13 |
| | | D160-D180 | | 1,133 | 14 |
| 700 | BNB710D | D112-D132 | 1,000 | 1,008 | 14 |
| | | D160-D200 | | 1,256 | 16 |
| 800 | BNB800D | D132-D180 | 1,120 | 1,248 | 15 |
| | | D200-D225 | | 1,349 | 17 |
| 900 | BNB900D | D160-D200 | 1,240 | 1,375 | 17 |
| | | D225-D250 | | 1,496 | 18 |
| 1,000 | BNB1000D | D160-D200 | 1,390 | 1,462 | 19 |
| | | D225-D250 | | 1,583 | 19 |
| 1,100 | BNB1120D | D180-D200 | 1,550 | 1,560 | 21 |
| | | D225-D280 | | 1,852 | 22 |
| 1,200 | BNB1250D | D180-D200 | 1,700 | 1,650 | 23 |
| | | D225-D280 | | 1,942 | 23 |
| 1,400 | BNB1400D | D180-D200 | 1,900 | 1,740 | 26 |
| | | D225-D280 | | 2,032 | 26 |
| 300 | ANA/BNA 315D | D71-D80 | 450 | 539 | 7 |
| | | D90-D100 | | 611 | 8 |
| | | D112 | | 628 | 8 |
| 400 | ANA/BNA 355D | D71-D90 | 490 | 603 | 8 |
| | | D100-D112 | | 652 | 9 |
| | | D132 | | 732 | 10 |
| 400 | ANA/BNA 400D | D90-D112 | 530 | 759 | 10 |
| | | D132-D160 | | 889 | 11 |
| 500 | ANA/BNA 450D | D90-D112 | 580 | 713 | 9 |
| | | D132-D160 | | 923 | 12 |
| 500 | ANA/BNA 500D | D90-D112 | 630 | 760 | 10 |
| | | D132-D160 | | 970 | 12 |
| 600 | ANA/BNA 560D | D90-D112 | 700 | 798 | 10 |
| | | D132-D160 | | 1,008 | 13 |
| | | D180 | | 1,066 | 13 |
| 700 | ANA/BNA 630D | D100-D132 | 790 | 928 | 12 |
| | | D160-D180 | | 1,116 | 14 |
| | | D200 | | 1,176 | 15 |
| 700 | ANA/BNA 710D | D100-D132 | 890 | 974 | 12 |
| | | D160-D180 | | 1,162 | 14 |
| 800 | ANA/BNA 800D | D200 | 1,000 | 1,222 | 15 |
| | | D225 | | 1,276 | 16 |
| 900 | ANA/BNA 900D | D132-D180 | 1,120 | 1,317 | 16 |
| | | D200-D225 | | 1,278 | 16 |
| 1,000 | ANA/BNA 1000D | D200-D225 | 1,240 | 1,379 | 17 |
| | | D225-D250 | | 1,406 | 17 |
| 1,100 | ANA/BNA 1120D | D160-D200 | 1,390 | 1,527 | 19 |
| | | D225-D250 | | 1,502 | 18 |
| 1,200 | ANA/BNA 1250D | D160-D200 | 1,550 | 1,623 | 20 |
| | | D225-D250 | | 1,571 | 19 |
| 1,400 | ANA/BNA 1400D | D180-D200 | 1,700 | 1,863 | 22 |
| | | D225-D280 | | 1,702 | 20 |
| | | D225-D280 | | 1,994 | 24 |

>> HEAT WHEEL QUICK SELECTION



| AHU Size | AHU Size (Top) | Section Length | Heatwheel Model |
|-----------|----------------|----------------|----------------------------------|
| 39CQM0608 | 39CQM0608 | 4 | ECW244 |
| 39CQM0609 | 39CQM0609 | 4 | ECW244 |
| 39CQM0610 | 39CQM0610 | 6 | HRW700 |
| 39CQM0711 | 39CQM0711 | 4 | HRW900/ECW324 |
| | | 6 | |
| 39CQM0712 | 39CQM0712 | 4 | HRW1000/ECW364 |
| | | 6 | |
| 39CQM0811 | 39CQM0811 | 6 | HRW900 |
| 39CQM0813 | 39CQM0813 | 4 | HRW1100/ECW424 |
| | | 6 | |
| 39CQM0912 | 39CQM0912 | 4 | HRW1000/ECW364 |
| | | 6 | |
| 39CQM0913 | 39CQM0913 | 4 | HRW1100/ECW424 |
| | | 6 | |
| 39CQM0914 | 39CQM0914 | 4 | HRW1200/ECW424 HRW1300/ECW484 |
| | | 6 | |
| 39CQM1015 | 39CQM1015 | 5 | ECW486 |
| | | 6 | |
| 39CQM1016 | 39CQM1016 | 5 | HRW1400/ECM544 |
| | | 6 | |
| 39CQM1117 | 39CQM1117 | 5 | HRW1500/ECM544 |
| | | 6 | |
| 39CQM1317 | 39CQM1117 | 6 | HRW1500 |
| | 39CQM1317 | 6 | |
| 39CQM1318 | 39CQM1318 | 5 | HRW1600/ECW604 |
| | | 6 | |
| 39CQM1320 | 39CQM1320 | 5 | HRW1800/ECW664 |
| | | 6 | |
| 39CQM1322 | 39CQM1322 | 5 | HRW2000/ECW784 |
| | | 6 | |
| 39CQM1418 | 39CQM1318 | 5 | HRW1600/ECM604 |
| | 39CQM1418 | 6 | |
| | | 5 | |
| | | 6 | |
| 39CQM1420 | 39CQM1320 | 5 | HRW1800/ECW664 |
| | 39CQM1420 | 6 | |
| | | 5 | |
| 39CQM1421 | 39CQM1421 | 5 | HRW1900/ECW724 |
| | | 6 | |
| 39CQM1422 | 39CQM1322 | 5 | HRW2000/ECW784 |
| | 39CQM1422 | 6 | |
| | | 5 | |
| | | 6 | |
| 39CQM1518 | 39CQM1318 | 5 | HRW1600/ECW604 |
| | 39CQM1418 | 6 | |
| | | 5 | |
| | | 6 | |
| | | 5 | |
| | | 6 | |
| 39CQM1518 | 5 | | |

Note:
Please refer to the nearest Carrier Representative for more details.

>> HEAT WHEEL QUICK SELECTION



| AHU Size | AHU Size (Top) | Section Length | Heatwheel Model |
|-----------|----------------|----------------|-----------------|
| 39CQM1521 | 39CQM1421 | 5 | HRW1900/ECW724 |
| | 39CQM1521 | 6 | |
| 39CQM1522 | 39CQM1322 | 5 | HRW2000/ECW786 |
| | 39CQM1422 | 6 | |
| | 39CQM1522 | 6 | |
| 39CQM1524 | 39CQM1524 | 5 | HRW2000/ECW844 |
| | | 6 | |
| 39CQM1525 | 39CQM1525 | 6 | HRW2200/ECW906 |
| | | 7 | |
| 39CQM1621 | 39CQM1421 | 5 | HRW1900/ECW726 |
| | 39CQM1521 | 6 | |
| | 39CQM1621 | 5 | |
| 39CQM1622 | 39CQM1422 | 6 | HRW2000/ECW786 |
| | 39CQM1522 | 6 | |
| | 39CQM1622 | 6 | |
| 39CQM1624 | 39CQM1524 | 6 | HRW2000/ECW846 |
| | 39CQM1624 | 6 | |
| 39CQM1625 | 39CQM1525 | 6 | HRW2200/ECW906 |
| | | 6 | |
| | 39CQM1625 | 7 | |
| 39CQM1822 | 39CQM1422 | 6 | HRW2000/ECW786 |
| | 39CQM1522 | 6 | |
| | 39CQM1622 | 6 | |
| | 39CQM1822 | 6 | |
| 39CQM1824 | 39CQM1524 | 6 | ECW846 |
| | 39CQM1624 | 6 | |
| | 39CQM1824 | 6 | |
| 39CQM1825 | 39CQM1525 | 6 | HRW2200/ECW906 |
| | 39CQM1625 | 7 | |
| | 39CQM1825 | 6 | |
| 39CQM2025 | 39CQM1525 | 7 | HRW2200/ECW906 |
| | 39CQM1625 | 6 | |
| | | 7 | |
| | 39CQM1825 | 6 | |

Note:
Please refer to the nearest Carrier Representative for more details.

| Model Name | Total No of Stage | Max kW per stage | Max kW for section |
|------------|-------------------|------------------|--------------------|
| 39CQM0608 | 2 | 5.7 | 11.4 |
| 39CQM0609 | 2 | 6.8 | 13.5 |
| 39CQM0610 | 2 | 8.4 | 16.8 |
| 39CQM0711 | 2 | 9.0 | 18.0 |
| 39CQM0712 | 2 | 10.2 | 20.4 |
| 39CQM0811 | 3 | 9.0 | 27.0 |
| 39CQM0813 | 3 | 11.3 | 33.8 |
| 39CQM0912 | 3 | 10.2 | 30.6 |
| 39CQM0913 | 3 | 11.3 | 33.8 |
| 39CQM0914 | 3 | 12.3 | 36.9 |
| 39CQM1015 | 4 | 13.5 | 54.0 |
| 39CQM1016 | 4 | 14.7 | 58.8 |
| 39CQM1117 | 4 | 15.6 | 62.4 |
| 39CQM1317 | 5 | 15.6 | 78.0 |
| 39CQM1318 | 5 | 19.5 | 97.5 |
| 39CQM1320 | 5 | 19.5 | 97.5 |
| 39CQM1322 | 5 | 19.5 | 97.5 |
| 39CQM1418 | 6 | 16.8 | 100.8 |
| 39CQM1420 | 6 | 19.5 | 117.0 |
| 39CQM1421 | 6 | 19.5 | 117.0 |
| 39CQM1422 | 6 | 19.5 | 117.0 |
| 39CQM1518 | 6 | 16.8 | 100.8 |
| 39CQM1521 | 6 | 19.5 | 117.0 |
| 39CQM1522 | 6 | 19.5 | 117.0 |
| 39CQM1524 | 6 | 19.5 | 117.0 |
| 39CQM1525 | 6 | 19.5 | 117.0 |
| 39CQM1621 | 7 | 19.5 | 136.5 |
| 39CQM1622 | 7 | 19.5 | 136.5 |
| 39CQM1624 | 7 | 19.5 | 136.5 |
| 39CQM1625 | 7 | 19.5 | 136.5 |
| 39CQM1822 | 8 | 19.5 | 156.0 |
| 39CQM1824 | 8 | 19.5 | 156.0 |
| 39CQM1825 | 8 | 19.5 | 156.0 |
| 39CQM2025 | 9 | 19.5 | 175.5 |
| 39CQM2125 | 9 | 19.5 | 175.5 |
| 39CQM2226 | 10 | 19.5 | 195.0 |
| 39CQM2230 | 10 | 19.5 | 195.0 |
| 39CQM2234 | 10 | 19.5 | 195.0 |
| 39CQM2330 | 11 | 19.5 | 214.5 |
| 39CQM2334 | 11 | 19.5 | 214.5 |
| 39CQM2434 | 11 | 19.5 | 214.5 |
| 39CQM2634 | 12 | 19.5 | 234.0 |
| 39CQM2636 | 12 | 19.5 | 234.0 |

GENERAL

1. Furnish and install central air handling units of the type, size and capacity shown on the equipment schedule.
2. The design of the air handling unit is based on the use of modular panels and extruded aluminum perimeter frames with composite corner piece (based on Carrier 39CQM series).
3. Units shall be horizontal/vertical draw-through type or horizontal blow-through type as shown on the certified drawings. In general, the unit shall consists of:
 - Mixing box section
 - Filter section
 - Coil section
 - Access or Plenum section
 - Heater section
 - Fan section

CASING

1. Unit shall be constructed of a complete frame with easily removable panels. Removal of any panel shall not affect the structural integrity of the unit.
2. All 39CQM unit sections shall be supplied with 14-gage G90 galvanized (100mm height) steel structural unit baseframe (optional 125mm c-channel baseframe is available if required). Lifting holes are provided for rigging purposes and are positioned to suit optimum hoisting stability.
3. The casing panels shall be solid double wall of 50mm nominal construction with injection foam insulation in between. The outer panel shall be painted 0.5mm thick galvanized steel (sky blue color– RAL 5012) and inner panel shall be unpainted 0.5mm thick galvanized steel as standard. The panel coating shall meet ASTM B117 Standard for 500-hour salt spray test.
4. The casing panels shall be insulated with injected cast-in-situ CFC-Free Polyurethane insulation foam with thermal conductivity of 0.020W/mK and a density of 40kg/m³ in between. The insulation shall be sandwiched and encapsulated between the inner and outer panel. Exposed insulation is not acceptable.
5. Casing panels shall have no exterior exposed raw edges that could lead to rust formation. All casing corners shall be radiused or chamfered.
6. All panels shall seal against a full casing perimeter with nitrile gasket to ensure a tight seal.
7. Mixing Box section shall be solid double wall, insulated casing (as mentioned in clause 3) and complete with necessary dampers for return and fresh air mixing. Accessibility options shall be with hinged access door on hand side or hinged access doors on both sides.
 - a) Viewports shall be available as a factory-installed option on the door of this section.
 - b) Marine lights shall be available as a factory-installed option.
8. Filter section shall be solid double wall, insulated casing (as mentioned in clause 3) and complete with necessary tracks or filters installation. Accessibility options shall be with hinged access door on hand side or hinged access doors on both sides.
 - a) Pressure gages (or pressure switches) shall be available as a factory-installed option.
 - b) Filter sections shall be designed and constructed to contain one of the following filter types:
 - Face/side loading 25mm or 50mm pre-filters
 - Side loading 50mm angle filters
 - Face loading 529mm bag filters with 50mm pre-filters
 - Side loading 529mm bag filters
 - Face loading HEPA filters

CASING (cont'd)

9. Coil section shall have solid double wall, insulated casing (as mentioned in clause 3) and complete with necessary fittings for coil installation. Accessibility options shall be with hinged access door (applicable for vertical AHU) or removable access doors (applicable for Heatpipe option).
10. Access and Plenum section shall have solid double wall and insulated casing (as mentioned in clause 3). Accessibility options shall be hinged access door on hand side or hinged access doors on both sides.
 - a) Viewports shall be available as a factory-installed option on the door of this section.
 - b) Marine lights shall be available as a factory-installed option.
11. Heater section shall have solid double wall, insulated casing (as mentioned in clause 3) and complete with necessary fittings for heater installation. Accessibility option shall be with removable access door on the hand side.
12. Heat Recovery Wheel (HRW) section shall have solid double wall, insulated casing (as mentioned in clause 3) and complete with necessary fittings for HRW installation. Accessibility option shall be with removable access door on the hand side.
13. Fan section have solid double wall double, insulated casing (as mentioned in clause 3) and complete with necessary base for fan/motor installation. Accessibility options shall be with hinged access door on hand side or hinged access doors on both sides.
 - a) Viewports shall be available as a factory-installed option on the door of this section.
 - b) Marine lights shall be available as a factory-installed option.
 - c) Blow-thru sections shall have a diffuser plate as an integral part of the fan section if used immediately downstream of the fan section.
 - d) The fan discharge shall be square in area and isolated from the casing by flexible canvas connection.

FANS**A. General**

1. Forward-curved fans shall have double width double inlet (DWDI) fan impeller and scroll. They shall be constructed of galvanized steel and shall be designed for continuous operation at the maximum rated fan speed and motor horsepower. Completed fan assembly shall be statically and dynamically balanced in accordance to ISO 1940.
2. Backward inclined fans shall have double width double inlet (DWDI) fan impeller and scroll. The fan assembly shall be cleaned, primed and painted with epoxy paint and shall be designed for continuous operation at the maximum rated fan speed and motor horse-power. Completed fan assembly shall be statically and dynamically balanced in accordance to ISO 1940.
3. Airfoil fan sections shall have one double width double inlet (DWDI) airfoil fan impeller and scroll. The fan assembly shall be cleaned, primed and painted with epoxy paint and shall be designed for continuous operation at the maximum rated fan speed and motor horse-power. Completed fan assembly shall be statically and dynamically balanced in accordance to ISO 1940.
4. Plenum/Plug fan sections shall have one single width single inlet (SWSI) fan impeller and scroll. The fan assembly shall be cleaned, primed and painted with epoxy paint. Completed fan assembly shall be statically and dynamically balanced in accordance to ISO 1940. Plug fan shall be direct driven.
5. Fan wheels shall be keyed to the shaft and shall be designed for continuous operation at maximum rated fan speed and motor horsepower. Fan wheels and shafts shall be selected with a maximum operating speed 25% below the first critical speed.
6. Fan shafts shall be solid carbon steel, turned, ground, polished and coated with protective paint. Hollow shafts are not acceptable.
7. Recommended fan discharge outlet velocity is between 10~12 m/s.
8. For variable air volume control, variable frequency drive (VFD) shall be supplied as indicated on the equipment schedule.

FANS (cont'd)

B. Performance Ratings

Air performance ratings of the fans shall be rated and certified in accordance with AMCA Standard 210.

C. Sound Ratings

Manufacturer shall publish first through eight octave sound power for fan inlet, fan discharge and airborne.

D. Mounting

Fan scroll, impeller, shaft, bearing, drives and motor shall be mounted on a common base assembly. The base assembly shall be isolated from the outer casing with factory-installed 2" helical spring deflector and flexible canvas connection.

E. Bearing

Fan bearings are with nominal 200,000hrs average life (L_{50}) as standard for all fans.

MOTOR

1. The motor size, type, speed and its electrical characteristics shall be as per the equipment schedule.
2. Fan motors shall be mounted within the fan section casing on slide rails to aid in belt tightening.
3. Fan motors shall be IP55 enclosure, totally enclosed fan cooled (TEFC) with class F insulation (optional with class H insulation) and class B temperature rise complying with BS2757.
4. Fan motors shall be standard efficiency (IE1) type. Optional high efficiency (IE2) or premium efficiency (IE3) motors shall be available, if specified. Motor efficiency class shall be based on IEC 60034-30:2008 Standard.
5. The motors shall be suitable for operation at ambient temperature of 40°C (max) with $\pm 10\%$ voltage utilization range and a 1.15 minimum service factor. For operation $> 40^\circ\text{C}$ please check with factory representative.

DRIVES

1. The drive assembly shall consist of V-belts and a set of fan and motor pulleys adequately sized to meet the specified performance.
2. The V-belts shall be SPZ, SPA, SPB or SPC grades, oil and heat resistance and having anti-static characteristic which prevent electrical discharge.

DRIVES (cont'd)

3. The motor and fan pulley dimension shall conform to ISO 4183 and shall be using taper-lock bush with set screws for easy and quick assemble and disassemble process. The pulley shall be phosphated and coated with a layer of rust prohibitive paint for protection against corrosion.
4. Drive shall be designed for a minimum 1.5 service factor as standard with a 2.0 service factor as option. Drives shall be fixed pitch with variable pitch as an option. All drives shall be factory mounted with sheaves properly aligned and balanced.

COILS

A. General

1. All cooling, heating and refrigerant (DX) coils shall be provided to meet the scheduled performance.
2. All coil performances shall be rated in accordance with AHRI 410 Standard and shall be tested at 400 psig air pressure while submerged under water.
3. All coils shall have minimum 12.7mm (1/2-in.) OD seamless copper tubes mechanically expanded into fins to ensure high thermal performance. Optional is with 9.5mm (3/8") OD copper tubes (applicable for cooling coil only).
4. All coils shall be with aluminum fin with belled collars. Optional copper fins or fins with protective coatings shall be supplied, if specified. Protective coatings shall be post coated and sprayed type only.
5. All aluminum fin coils shall be supplied with galvanized casing and steel tube sheets. Optional stainless steel or aluminum tube sheet shall be supplied, if specified. Copper fin coils shall be supplied with stainless steel casing and tube sheets.
6. All water coils shall be with 1 – 8 rows and 8,10,12,14 fin per inch (fpi) whereas refrigerant coils shall be with 4 ,6 rows and 8,10,12,14 fin per inch (fpi).
7. Moisture eliminator shall be provided, if specified on the equipment schedule to trap moisture droplets. The moisture eliminator material shall be aluminum, mesh aluminum or PVC type as specified.

B. Cooling and Heating

1. Headers shall be constructed of seamless steel pipe material with threaded (MPT) connections. Headers shall have drain and vent connections accessible from the exterior of the unit. Optional copper headers with sweat connection shall be supplied if specified.
2. Coils shall be drainable, with non-trapping circuits and without turbulence promoting devices. Coils will be suitable for a design working pressure of 300 psig at 93°C (cooling coils) or 175 psig at 205°C (heating coils).
3. Coil shall be designed for counter flow arrangements (chilled water/hot water flow against airflow direction).

C. Direct Expansion (DX)

1. Headers shall be constructed of seamless copper pipe material with brazed joints.
2. DX coil circuiting shall include dual distributors arrangement for all sizes (optional single distributor arrangement for 39CQM0608 – 39CQM0813). Brass nozzles and distributors are factory supplied to ensure uniform flow. Thermal expansion valves shall be provided if specified.
3. DX coils shall have full face active area with row-split intertwined circuits for equal loading (optional face-split if specified). Suction and thermal valve connection shall be on the same side.
4. DX coils shall be designed for counter flow arrangements (refrigerant flow against airflow direction).

COILS (cont'd)

D. Drain Pans

1. Drain pans shall be single wall, 1.5mm thick galvanized (and powder painted) or SS304 stainless steel construction as specified. The drain pan depth shall be 40mm with 500mm width and insulated with 3mm PE closed cell insulation underneath to prevent condensation.
2. The drain pan shall be sloped toward the drain fitting to ensure positive condensate drainage and shall extend downstream of the coil to provide sufficient amount of space to contain moisture carry-over. Drain pan shall allow no standing water and design in accordance to ASHRAE Standard 62.
3. Drain pan shall have a side drainage design with integral FPT elbow (43mm OD) for side discharge and trapping. One drain outlet shall be supplied for each cooling coil section unless otherwise indicated.
4. Where 2 or more coils are stacked in a coil bank, intermediate drain pans shall be provided and the condensate shall be piped to the bottom drain pan. The bottom coil shall not serve as a drain path for the upper coil.
5. The coil shall not sit in the drain pan and shall be removable via a coil track.

ELECTRICAL HEATERS

1. Electric heater capacity and steps shall be as indicated on the equipment schedule. See electrical table for details.
2. The electric heater element shall be constructed from 80/20 nickel chrome resistance wire which is connected to terminal pins and centered in SS304 stainless steel sheath tubes by compressed magnesium oxides.
3. The manufacturer shall furnish a control box (if required) containing contactor, thermostat and circuit breaker. Heater control box shall be mounted on the designated hand side of the unit.

FILTER

1. Provide the type and efficiency of the filters as per the equipment schedule.
2. High velocity filter sections shall accept 25mm or 50mm (G3 or G4) washable or throw-away filters.
3. Angle filter sections shall accept 50mm (G3) washable filters of standard flat filter sizes, arranged in a horizontal V formation.
4. Bag filter sections shall be capable of accepting (F5 - F9) bag filters with length up to 529mm with 22mm header.
5. Blow-thru HEPA filter sections shall contain a face loading filter frame and be capable of accepting standard size 300mm deep HEPA filters (H13-H14).
6. Optional Magnehelic/ Minihelic filter gages (or filter switches) complete with necessary tubing to measure the pressure drop across the filters shall be provided if specified.

MXB DAMPERS

1. Provide factory installed opposed acting dampers as per the approved drawings.
2. Damper frame shall be made of extruded and anodized aluminum. Damper blades shall also be extruded and anodized aluminum airfoil shape to withstand high velocity and static pressure. Dampers shall be provided with flexible synthetic blade edge seals for low leakage application.
3. Damper shall be sectionalized to limit blade length to be less than 1800mm in order to prevent excessive blade warping. Outdoor air and return air damper size shall be of the same area for equal air mixing.

ACCESSORIES

A. Viewports

1. Viewports shall be available as factory installed option on access doors. The viewports shall be fabricated from round, double plane, clear and rigid polycarbonate with a minimum diameter of 200mm and installed with screws that do not come into direct contact with the internal surface of the air handling unit.
2. The viewport shall be gasketed on the internal and external surface with thermoplastic elastomer (TPE) gaskets to ensure air-tightness. The viewport shall be capable of withstanding unit operating pressures.

B. Marine Lamp

1. Marine lamps shall be available as factory installed option on the mixing box, empty and fan sections of the air handling unit. The construction shall be vapor tight and rated to IP44.
2. The marine lamps shall consist of a structural light fitting base with aluminum reflector receptacle and structural glass globe protected by wire mesh.
3. The marine lamps shall come fitted with a light bulb complete with factory installed wiring and terminated with an IP55 rated switch located external to the unit.



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